

m and n are identical or different and are zero or 1 and wherein for at least one of the at least two metallocenes R³ is a substituted indenyl or an optionally substituted fluorenyl.

22. The process as claimed in claim 17, wherein said two different metallocenes are rac-dimethylsilyl(2-methyl-1-indenyl)₂ZrCl₂ and rac-dimethylsilyl(indenyl)₂HfCl₂.

Please see Appendix I for the changes made to the claims. The terms underlined have been added to the claim and the terms bracketed have been deleted from the claims.

REMARKS

The applicants respectfully request reconsideration in view of the amendment and the following remarks. The applicants have amended the claims as suggested by the Examiner in order to overcome the 35 U.S.C. §112 rejections. The applicants have also amended claim 22 so that it is not dependent on cancelled claim 20.

Claims 15, 17-19, 21-25 and 27-32 were rejected under 35 U.S.C. §112, first paragraph.

Claims 15, 17-19, 21-25 and 27-32 were rejected under 35 U.S.C. §112, second paragraph.

Claim 32 was rejected under 35 U.S.C. §112, fourth paragraph. Claims 15, 17-19, 21-25 and 27-31 were rejected under the judicially created Doctrine of Obviousness-Type Double Patenting as being unpatentable over claims of U.S. Patent No. 5,700,866, hereinafter referred to as "Winter '866". To the extent that these amendments do not overcome the rejections, the applicants respectfully traverse these rejections.

Rejection of Claims 15, 17-19, 21-25 and 27-31

Claims 15, 17-19, 21-25 and 27-32 were rejected under 35 U.S.C. §112, first and second paragraphs. The claims were objected to as containing new matter.

The applicants do not believe that the claims contain new matter. The language of the present application refers to a "broad, bimodal, or multimodal melting range" and a "melting range maximum". The definition 2.2 in the right column of page 1 of the enclosed ISO 3146 (published in 1985, prior to the filing date of this application) discloses that a "melting range" is a temperature range, i.e. a temperature interval. A span of temperature can neither have a maximum nor a bimodal or multimodal shape. This is only possible for the curve in this interval. The portion of a DSC curve which departs from the baseline is called "peak" (see definition 13.4 in the left column of page 6 of ISO 3146) wherein the baseline is the portion or the portions of the DSC curve for which the heat flux is constant or, in other words, which is obtained if the sample does not show a phase transition. Therefore, a person of ordinary skill in the art automatically adds "peak" if he reads "maximum" or "bimodal or multimodal" in the context of a DSC spectrum.

With respect to the 35 U.S.C. § 112 rejection, claim 17 states that the DSC spectrum is determined with a heating/cooling rate of 20°C which is supported by page 14, lines 16 - 18 of the specification. This information, together with his knowledge that normally the thermal history is erased to obtain unambiguous material properties, is sufficient for a person of ordinary skill in the art to repeat the measurement. This means to run first a heating/cooling cycle and then start recording the DCS curve (see paragraph 17.2.2 in the left column of page 8 of ISO 3146).

The determination of half width and quarter width is in the absence of any further information (as in the present case) only possible, but unambiguous, if the person of ordinary skill in the art follows logic and the pure definition of the terms.

A peak is that portion of a DSC curve which departs from the baseline (definition 13.4 in the left column of page 6 of ISO 3146). The baseline is the portion or the portions of the DSC

curve for which the heat flux is constant, i.e. where no phase transition occurs (definition 13.3 of ISO 3146).

Since claim 17 states that the polyolefin molding composition has a melting range there must exist a peak in the DSC spectrum. This peak can be unimodal (broad melting range), bimodal or multimodal, i.e. it can have one, two or more tips. However, since the definition of a peak, in the absence of any further information, can only mean that part of the DSC curve which is between the temperature where the DSC curve leaves the baseline and the temperature where the DSC curve comes back to the baseline again, the whole portion of the DSC curve between these two temperatures is unambiguously the melting peak, independently whether it has one, two or more tips.

At the temperature where the distance, vertical to the temperature axis, between interpolated baseline and the DSC curve is greatest (see definition 13.6 of ISO 3146) is the maximum of the peak in the melting range (which has to be between 120 and 165 °C according to claim 17).

Half width and quarter width are unambiguously determined at a distance from the baseline which is half of the peak height in the maximum or which is a quarter of the peak height in the maximum.

Therefore, it is totally clear what the meaning of claim 17 is if the melting peak has only one tip or, if it has two or more tips, the valley between the tips is higher than half of the peak height in the maximum. Then half width and quarter width are the distances between those points where the parallels of the baseline in the respective distances intercept with the DSC curve.

For the case that the valley between two neighbored tips is lower than half or even the quarter of the peak height in the maximum, there exist at least two more intercepts with the DSC curve. The pure logic then teaches that the width determined at half peak height (or quarter peak height) is the sum of those distances where the DSC curve is above this distances, as in the above discussed clear case, without the distances where the DSC curve is below this distance. Therefore,

even in the most complicated case, the person of ordinary skill in the art knows how to determine its meaning. For the above reasons these rejections should be withdrawn.

REJECTION OF CLAIM 32

Claim 32 was rejected under 35 U.S.C. §112, fourth paragraph. The applicants believe that claim 32 further limits claim 17. For the above reasons, this rejection should be withdrawn.

Double Patenting Rejection

Claims 15, 17-19, 21-25 and 27-31 were rejected under the judicially created Doctrine of Obviousness-Type Double Patenting as being unpatentable over claims of Winter '866. The applicants will submit a Terminal Disclaimer to obviate this rejection, once the other rejections have been withdrawn.

No additional fee is due. If there are any additional fees due in connection with the filing of this response, including any fees required for an additional extension of time under 37 C.F.R. 1.136, such an extension is requested and the Commissioner is authorized to charge or credit any overpayment to Deposit Account No. 03-2775.

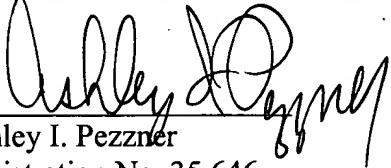
For the reasons set forth above, Applicants believe that the claims are patentable over the references cited and applied by the Examiner and a prompt and favorable action is solicited. The applicants believe that these claims are in condition for allowance, however, if the Examiner disagrees, the applicants respectfully request that the Examiner telephone the undersigned at (302) 888-6270.

SERIAL NO: 08/120,105

92/F 294 (9086*85)

Respectfully submitted,

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ATTACHMENT: ISO 3146 published 12/15/85

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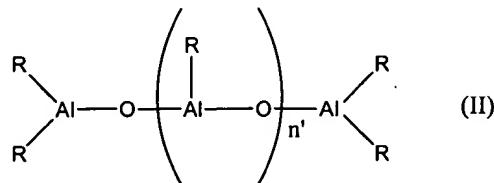
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APPENDIX I

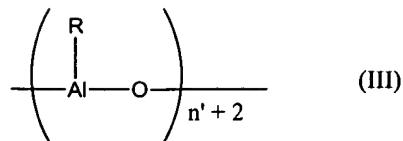
17. A process for the preparation of a polyolefin molding composition comprising at least two polyolefinic components, wherein the composition is characterized by a broad, bimodal, or multimodal melting range in a DSC spectrum determined with a heating/cooling rate of 20° C/min [having] wherein the peak in the melting range has a maximum and can be bimodal or multimodal and [wherein] the [melting range] maximum of the peak in the melting range is between 120 and 165°C, the half-intensity width of the melting [maximum] peak is broader than 10°C and the width determined at quarter peak [maximum] height is greater than 15°C, wherein such process comprises the direct polymerization of propylene or copolymerization of propylene with olefins of the formula R^aCH = CHR^b, in which R^a and R^b are identical or different and are a hydrogen atom or an alkyl radical having 2 to 14 carbon atoms[, or R^a and R^b and] wherein the polymerized ethylene content of the resulting polyolefin composition is from 0 to 2.5% by weight,
to at least two polyolefins of different melting points, wherein the melting points of the polyolefins must differ by at least 5° C, and wherein the polymerization is carried out at a temperature of from -60 to 200°C, and a pressure of from 0.5 to 100 bar, in solution, in suspension or in the gas phase, in the presence of a catalyst, wherein the catalyst comprises

(A) at least two racemic or s-symmetric metallocenes as transition-metal components and an aluminoxane of the formula II



and/or of the formula III

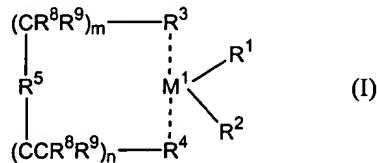
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where in the formulae II and III, the radicals R may be identical or different are a C₁-C₆-alkyl group, a C₁-C₆-fluoroalkyl group, a C₆-C₁₈-aryl group, a C₆-C₁₈-fluoroaryl group or hydrogen, and n' is an integer from 0 to 50, and the aluminoxane component may additionally contain a compound of the formula AlR₃, or

(B) at least two racemic or s-symmetric metallocenes as transition-metal components and a salt-like compound of the formula R_xNH_{4-x} or of the formula R₃PHBR'₄ wherein x is 1, 2 or 3, R is identical or different and is alkyl or aryl, and R' is aryl, which may also be fluorinated or partly fluorinated,

where the transition-metal component used comprises at least two metallocenes of the formula I:



in which

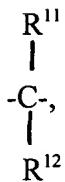
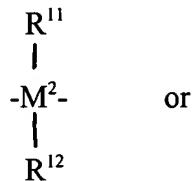
M¹ is Zr or Hf,

R¹ and R² are identical or different and are a hydrogen atom, a C₁-C₁₀-alkyl group, a C₁-C₁₀-alkoxy group, a C₆-C₁₀-aryl group, a C₆-C₁₀-aryloxy group, a C₂-C₁₀-alkenyl group, a C₇-C₄₀-arylalkyl group, a C₇-C₄₀-alkylaryl group, a C₈-C₄₀-arylalkenyl group, or a halogen atom,

R³ and R⁴ are identical or different and are indenyl, cyclopentadienyl or fluorenyl which are optionally substituted with substituents as defined for R¹¹ and R¹² and where the substituents are identical or different or form together with the atoms

connecting them a ring,

R^5 is



where R^{11} and R^{12} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10} -alkyl group, a C_1-C_{10} -fluoroalkyl group, a C_6-C_{10} -aryl group, a C_6-C_{10} -fluoraryl group, a C_1-C_{10} -alkoxy group, a C_2-C_{10} -alkenyl group, a C_7-C_{40} -arylalkyl group, a C_8-C_{40} -arylalkenyl group or a C_7-C_{40} -alkylaryl group, or R^{11} and R^{12} together with the atoms connecting them, form a ring,

M^2 is silicon or germanium,

R^8 and R^9 are identical or different and are as defined for R^{11} and m and n are identical or different and are zero or 1 and wherein for at least one of the at least two metallocenes R^3 is a substituted indenyl or an optionally substituted fluorenyl.

22. The process as claimed in claim [20] 17, wherein said two different metallocenes are rac-dimethylsilyl(2-methyl-1-indenyl)₂ZrCl₂ and rac-dimethylsilyl(indenyl)₂HfCl₂.